

REMARKS

In the above referenced case, claims 176-232 are pending. Applicant will sequentially address the issues raised by the Examiner.

I. Objections to the Drawings

The drawings were objected to under 37 CFR 1.83(a). Specifically, the Examiner objected to the drawings with respect to four different groups of claims: (A) claims 185-188, 199-202, 214-216, 218, and 227-230; (B) claims 180, 186, 194, 200, 209, 215, 222, and 228; (C) claims 183, 197, 212, and 225; and (D) claims 184, 198, 213, and 226. Applicant will sequentially address each group of claims.

A. Claims 185-188, 199-202, 214-216, 218, and 227-230

Figure 20C illustrates an exemplary projector capable of producing light having two constituent parts. The Specification describes Figure 20C as follows:

Each constituent part generates a collinear beam as in FIG. 8F. They are then combined together in polarizer analyzer 146 as explained for the diagram and with reference to FIG. 8F. Specification, page 90, paragraph 2 (emphasis added).

Each collinear beam generated by each constituent part is passed to the polarizer analyzer 146 which resolves the respective portions of each beam into P and S components with the S component being deflected to the left and the P component passing through. As a result, the P component from the first beam (e.g., of the first constituent part) and the S component from the second beam (e.g., of the second constituent part) are combined to be displayed on a projection screen. See Specification, page 84, paragraph 3.

Claims 185-188, 199-202, 214-216, 218, and 227-230 have been amended to correct certain typographical errors and now conform with the exemplary

embodiment¹ shown in FIG. 20C where the merged beams exiting the analyzer 146 have substantially different selected predetermined orientation of a chosen component of electromagnetic wave field vector. Thus, Applicant respectfully submits that these claims have overcome the drawings objections.

B. Claims 180, 186, 194, 200, 209, 215, 222, and 228

Figures 8E and 8F both illustrate an exemplary projector having light sources 170, 172, 174 capable of producing light having a plurality of portions. “Such light sources can include a matrix of linear array diodes formed in a rectangular shape, a planar matrix of solid state lasers, LEDs light emitting diodes, etc.” Specification, page 84, paragraph 3.

Figure 20C illustrates an exemplary projector capable of producing light having two constituent parts based on Figures 8E and 8F. The Specification describes Figure 20C as follows:

Each constituent part generates a collinear beam as in FIG. 8F. They are then combined together in polarizer analyzer 146 as explained for the diagram and with reference to FIG. 8F. This combination can be of the form where the beams are combined exactly one on the other with different polarizations or one beam can be shifted with respect to the other so that the plurality of portions are offset from one another, or the portions overlap one another. Also, as explained before, the timing of the beams can produce beams that are temporally in sync with one another or can alternate between the different fields of the desired information to be displayed. Specification, page 90, paragraph 2 (emphasis added).

¹ The embodiments disclosed in the Figures and the corresponding text are merely exemplary and should not be construed to limit the scope of the claims to only the exemplary embodiments as shown.

Figures 8E, 8F, 20C and their respective corresponding text in the Specification demonstrate exemplary implementations of how beams of electromagnetic energy can have a plurality of portions that are parallel and noncoincident (e.g., “one beam can be shifted with respect to the other so that the plurality of portions are offset from one another ...”)¹. Thus, Applicant respectfully requests the Examiner to withdraw the drawings objections of these claims.

C. Claims in Groups (C) & (D)

Claims in groups (C) and (D) have been canceled. Therefore, the objections with respect to these claims are now moot.

II. Claim Objection

Claim 230 was objected to for an informality. Claim 230 has been amended to correct the typographical error.

III. The 35 U.S.C. §112, First Paragraph, Rejections

Claims 183-184, 197-198, 212-213, and 225-226 were rejected under 35 U.S.C. §112, First Paragraph. These claims have been canceled; therefore, these rejections are now moot.

IV. The 35 U.S.C. §103 Rejections

Claims 176, 178-179, 181-184, 189, 190, 192-193, 195-198, 203-205, 207-208, 210-213, 217, 220-221, 223-226, and 231-232 were rejected under 35 U.S.C. §103(a) as being unpatentable over Sato et al., U.S. Patent No. 5,042,921 (“SATO”) in view of Atarashi et al., U.S. Patent No. 5,172,254 (“ATARASHI”).

Specifically, the Examiner cited Figure 24 of SATO and Figure 5 of ATARASHI for rejecting these claims. Applicant respectfully traverses the rejections.

A. Overview

1. Figure 24 of the SATO Reference

Figure 24 of SATO shows a liquid crystal projector that can project images having improved contrast. SATO, col. 22, lines 32-33, and col. 24, lines 15-16. Specifically, the improved contrast is achieved by vertically offsetting pixels of two beams of light projected via two projection lens.

Upon projection [by projection lenses 727 and 728], the rows of pixels 729 of the image projected by the light rays having the P-polarized light component and the rows of pixels 730 of the image projected by the light rays having the S-polarized light component are vertically offset from each other by one pitch and alternately synthesized in units of rows as shown in FIGS. 25 to 27 so that the pixels 729 and 730 do not overlap each other. Therefore, although brightness and resolution of the image projected on the screen 706 are the same as those obtained by a conventional apparatus, its duty ratio is increased. As a result, contrast is improved to realize a clear projected image. SATO, col. 24, lines 5-16 (emphasis added).

Thus, in order to achieve the improved contrast, SATO requires two beams of light to be projected via two projection lens onto a screen at an offset to each other.

2. Figure 5 of the ATARASHI Reference

Figure 5 of ATARASHI discloses a display apparatus that produces a single beam of light which is projected through a single lens onto a projection screen.

That is to say, the polarized light beam splitter 17 has a function to compose the P polarized light component entering it from the dichroic mirror 21RP and the S polarized light component entering it from the dichroic mirror 21RS through the plane mirror 18 to irradiate the composed light toward the screen 20 [through the lens 19]. ATARASHI, col. 8, lines 60-65 (emphasis added).

B. The Proposed Modification Cannot Change the Principle of Operation of a Reference

“If the proposed modification or combination of the prior art would change the principle of operation of the prior art invention being modified, then the teachings of the references are not sufficient to render the claims *prima facie* obvious.” MPEP 2143.01 (emphasis added).

The proposed combination of using ATARASHI to modify SATO would change the principle of operation of the SATO invention. SATO explicitly requires that two beams of light must be projected (via two projection lenses) at an offset to achieve an improved contrast. In contrast, ATARASHI discloses using a single projection lens to project a single beam of light. Therefore, modifying SATO to project a single beam of light via a single lens will change the principle of operation of SATO. Based on the foregoing, Applicant respectfully submits that these references are not sufficient to render the claims *prima facie* obvious and requests the Examiner to withdraw the 103 rejections.

C. There Is No Motivation to Combine ATARASHI and KONNO

“The mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggest the desirability of the combination.” MPEP 2143.01. “If proposed modification would render the prior art invention being modified unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the proposed modification.” *Id.*

The proposed combination of SATO and ATARASHI would render the SATO invention unsatisfactory for its intended purpose. SATO explicitly requires that two beams of light must be projected (via two projection lenses) at an offset to achieve an improved contrast. In contrast, ATARASHI discloses using a single projection lens to project a single beam of light. Therefore, the proposed modification of SATO (i.e., combine the two light beams into a single beam then project the single beam through a single lens onto a screen) would render the SATO invention unsatisfactory for its intended purpose (i.e., improving contrast by offsetting the projection of two beams of light). Based on the foregoing, there is no motivation to combine SATO and ATARASHI.

D. Conclusion

The Examiner cited the combination of SATO and ATARASHI to reject all independent claims (i.e., claims 176, 190, 205, and 217) and some dependent claims. Based on all of the foregoing, Applicant respectfully submits that the combination of SATO and ATARASHI was improper; therefore, the pending claims (i.e., claims 176-232) are not unpatentable over these references.

V. The 35 U.S.C. §103 Rejections Regarding Dependent Claims

Various combinations of dependent claims were rejected under 35 U.S.C. §103(a) as being unpatentable over SATO in view of ATARASHI and one or more other patents. Based on the foregoing regarding independent claims 176, 190, 205, and 217, Applicant respectfully submits that the §103 rejections of the dependent claims are now moot and these claims are in condition for allowance.

VI. Conclusion

In view of the foregoing, it is respectfully submitted that the application is now in condition for allowance. Should the Examiner believe that a telephone interview would help advance the prosecution of this case, the Examiner is requested to contact the undersigned attorney.

Respectfully submitted,

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